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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/574,347	04/03/2006	Antonio Marchetti	2508-1028	8862

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EXAMINER	
HAMO, PATRICK	
ART UNIT	PAPER NUMBER
3746	

NOTIFICATION DATE	DELIVERY MODE
06/01/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

DocketingDept@young-thompson.com

Office Action Summary	Application No.	Applicant(s)	
	10/574,347	MARCHETTI, ANTONIO	
	Examiner	Art Unit	
	PATRICK HAMO	3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 March 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) *2-5,8 and 11-13* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 6, 7, 9, 10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This action is in response to amendments filed on March 12, 2010.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 6, 7, 9 and 10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claims 6, 7, 9 and 10 include limitations drawn to the toothed rod (21, claims 6 and 7), unidirectional gears (24 and 25, claims 6, 7, 9 and 10) and a differential (28, claims 6, 7, 9 and 10). These features are characteristic of the embodiment of figs. 11-13. This embodiment does not include the sluice gate (1), the filters (2), unidirectional valves (3 and 4) and other features characteristic of the embodiments of figs. 1-10 that are included in claim 1. Therefore, claims 6, 7, 9 and 10, which are dependent from claim 1 and incorporate all the limitations claimed therein, are directed to a combination of embodiments that applicant has neither disclosed as compatible together nor described in such a way as to enable one skilled in the art to make and use.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Welch, Jr, et al., US 2004/0131479 in view of McLean et al., US 3,595,189, further in view of Heck, US 4,447,740, further in view of Meano, US 6,800,954, and further in view of Brinkerhoff, US 4,242,878.

Welch discloses a hydro-pneumatic device for the exploitation of wave motion wherein at least one submerged cylinder 108 provided in its lower part with an opening for a water inlet (paragraph 271) and at its upper part with openings 124, 126 for producing compressed air, the inlet 126 including a filter (paragraph 215), the openings including unidirectional valves (paragraph 57), the cylinder including a body 108, a floating piston 120, so that water entering the cylinder due to wave motion (see figs. 4A-4C) pushes the piston toward the head of the cylinder (fig. 4A) so that air is compressed and discharged through outlet 126, and when the wave lowers (fig. 4B), the piston is withdrawn downwards closing the outlet valve and opening inlet valve 124, so that fresh air cleaned by the filter enters the cylinder.

Welch does not disclose a series of cylinders placed onto wharfs or floating pontoons, a conical opening for the water inlet, lateral openings for producing the

compressed air, a sluice gate, the piston and cylinder having semispheric heads, or a plurality of bands for sealing the piston.

However, McLean teaches a wave-actuated piston machine that includes a plurality of cylinders 31 installed on a floating structure 24, which would have been an obvious, predictable alternative to fixing the cylinder structure to the sea floor as disclosed by Welch, with a reasonable expectation of success.

Furthermore, Heck teaches a wave responsive generator that includes a conical inlet 48 for greater water intake to the converting device, in this case a turbine, but the principal of allowing greater water inflow intake applicable to a piston pump as well. Therefore, it would have been obvious to a person having ordinary skill in the art to have provided a conical intake portion to the device of Welch.

In regard to the limitation that the openings are lateral, even if the side by side openings of Welch are not interpreted as lateral, but rather laterally is more narrowly defined as along the sides of the cylinder, this would constitute an obvious rearrangement of parts well known in the art. Meano teaches a wave energy pump with lateral openings 23 and 12 for the transport of compressed air.

Meano also teaches a hand-operated valve 31 that closes the air passage for selectively operating the wave pump. It would have been obvious to a person having ordinary skill in the art that the valve would operate substantially as a sluice gate, and to have modified the pump of Welch with the valve so as to be able to selectively control operation.

Brinkerhoff teaches a compressor with a semispherical cylinder and piston head (56, 70, respectively) and sealing bands 67, 68 and 69 disposed between the piston and cylinder. It would have been an obvious change of shape for a person having ordinary skill in the art to have made the piston semispherical instead of flat as taught by Brinkerhoff.

Claims 6, 7, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied to claim 1 in view of Scott, US 4,418,286.

In regard to claim 6:

The references as applied to claim 1 above teach all of the limitations substantially as claimed except for the following taught by Scott: a power shaft 19 with teeth for connecting to bevel gear 75 (for the transmission of the shafts); a guide (shaft housing 74) for sliding og the rod, a unidirectional gear 78, a plurality of shafts 98, 102 for the distribution of the mechanical motion, a differential 76, 77, one or more "users" in the form of electrical generators, with the power shaft being driven by wave motion to capture the mechanical energy of the waves of mechanical energy, which is ultimately used to power electrical generators. It would have been obvious to a person having ordinary skill in the art to have modified the structure of the references as applied to claim 1 above with the teaching of Scott to achieve the predictable result of using the wave energy in the pistons to store electrical energy. Note that the fluid outlets for the

water and the outlet coverings of Welch as applied to claim 1 may be interpreted as outlet openings and grills for excess water.

In regard to claim 7:

The references as applied to claim 1, as discussed above, already teach all of the limitations presented in claim 7 except for shock absorbers. However, Scott also teaches shock absorbers 37.

In regard to claim 9:

Gears 75 and 78 are both unidirectional, shafts 98 and 102 distribute the motion, and gear 77 transmits motion to differential 76, 77.

In regard to claim 10:

The references as applied to claim 1 and discussed above teach a series of cylinders so that, when the wave passes, the water enters the cylinder from the inlet cone and receives such a pressure as to push upwards a piston. However, instead of being connected to a toothed rod which operates gears, the piston compresses air. However, Scott teaches a toothed rod 19 that operates a gear 78 such that the wave motion is transmitted from said rod to distribution shafts 98, 102 so that, when the rod rises, the gear 78 puts into rotation its distribution shaft while gear 75 turns idle, without operating its own shaft, and when the shaft comes down, the inverse happens and the gear puts into rotation its own distribution shaft, while gear turns idle; the movement of

the two shafts 98, 102 is transformed into one single direction by said gear and transmitted to said differential 76, 77. It would have been obvious to a person having ordinary skill in the art to have modified the structure of the references as applied to claim 1 above with the teaching of Scott to achieve the predictable result of using the wave energy in the pistons to store electrical energy.

Response to Arguments

Applicant's arguments filed March 12, 2010 have been fully considered but they are not persuasive.

35 USC 112, first paragraph

In regard to applicant's argument that the rejection of claims 6, 7, 9 and 10 under 35 USC 112, first paragraph is improper, examiner maintains the rejection. Applicant contends that the phrase "the following additional elements are shown" in figs. 11-13 makes clear to one skilled in the art that the elements that follow are to be added to the elements already disclosed in figs. 1-10. However, first of all, the device of figs. 11-13 is a device for transforming the wave motion directly into mechanical energy by means of the toothed rod and gearing, whereas the device of figs. 1-10 is a device for compressing air. While both disclosed devices transform wave motion, the very different purposes of the two would suggest to one skilled in the art that they do not share the same structural elements. Namely, an air compressor normally has no use for a toothed rod or a plurality of gears. And in the device of figs. 1-10, no rods or gears are shown, as expected. A device for converting wave motion to mechanical energy,

similarly, normally has no use for valves and sluice gates. The device of figs. 11-13 as expected shows no such elements. However, if claim 6 is to depend on claim 1, the device of claim 6 would include both valving for compressed air flow and rods and gears for transformation of mechanical energy, counter to the intuition to one skilled in the art and the devices as shown in the drawings. Secondly, even if the phrase "the following additional elements are shown" in the disclosure are interpreted to imply, counter to the intuition of one skilled in the art and the devices shown in the drawings, a device with both the unidirectional valves and gears for transformation of wave energy into mechanical energy, the inclusion of a floating piston in the "additional" elements confuses the person of ordinary skill, as a floating piston was already disclosed and described in the device of figs. 1-10. Therefore, the rejection under 35 USC 112 was maintained.

35 USC 103

In response to applicant's argument that one of ordinary skill in the art would not have combined the teaching of Welch with Heck, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). In regard to the combination of Welch with Heck, as discussed in the rejection above, the principal of allowing greater water inflow intake taught by Heck with regard to a wave-activated turbine is applicable

to a piston pump as well. Therefore, it would have been obvious to a person having ordinary skill in the art to have provided a conical intake portion to the device of Welch. One of ordinary skill in the art would find this much obvious, and it would further be obvious that the conical outlet would not be used to modify the compressor of Welch, as Welch uses a piston where Heck uses a turbine.

In response to applicant's argument that the limitation that the opening are lateral are not a design choice for compressed liquid in Heck above, the examiner notes that the lateral openings of Meano are used to modify the openings of the primary reference to Welch, as the openings of Heck are not discussed in the combination of references. Heck was relied upon for the teaching that a conical opening allows for more water intake from a wave source, as used to modify the primary reference of Welch which teaches the use of wave energy for air compression, not for the use of the turbine to convert the wave energy to mechanical energy.

In response applicant's argument that Welch, McLean, Heck, Meano and Brinkerhoff each function in a manner separate from each other and would not logically be combined, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, all of the above references are in the field of converting wave energy for useful purposes and/or for the compression of air, such that they may logically be consulted to modify and improve the primary reference of Welch, which

teaches the use of wave energy to compress air, even if they put the wave energy to other use or have a different drive source for their air compressors.

In response to applicant's argument that the references above and Scott is nonanalogous art, examiner notes, as discussed in the rejection above, that an intermediate step of Scott's conversion of wave motion to electrical energy is the conversion of wave motion to mechanical energy. The ultimate user in Scott is an electrical generator, which is different from the end user contemplated by the applicant, but does not change the fact that the wave motion is being converted to mechanical energy.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PATRICK HAMO whose telephone number is (571)272-3492. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on 571-272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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